

INTERNATIONAL SEARCH REPORT

International Application No.

PCT/JP03/03858

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl.⁷ B01J35/04, B01D53/86, F01N3/28

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl.⁷ B01J21/00-38/74, B01D53/86, B01D53/94, B28B3/00-5/12,
F01N3/28

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

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Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	JP 2002-321210 A (Denso Corp.), 05 November, 2002 (05.11.02), Claims 6, 11, 13, 15; Par. Nos. [0025], [0049], [0064], [0075] to [0077]; Figs. 1, 6, 12 (Family: none)	1, 2, 7-15, 19, 21, 22, 25-31
X	JP 61-108507 A (Matsushita Electric Industrial Co., Ltd.),	1-4, 7, 8, 22, 26
Y	27 May, 1986 (27.05.86), Claim 1; page 1, lower right column, lines 9 to 11;	6, 19, 24, 25, 27-31
A	page 2, upper left column, lines 2 to 9; page 2, lower left column, line 16 to lower right column, line 6; Figs. 1, 3 (Family: none)	5, 20, 23

☒ Further documents are listed in the continuation of Box C.
 ☐ See patent family annex.

* Special categories of cited documents:

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"E" earlier document but published on or after the international filing date

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"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search
01 July, 2003 (01.07.03)Date of mailing of the international search report
15 July, 2003 (15.07.03)Name and mailing address of the ISA/
Japanese Patent Office

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INTERNATIONAL SEARCH REPORT

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 2-102004 A (NGK INSULATORS, LTD.), 13 April, 1990 (13.04.90), Page 4, upper left column, lines 10 to 18; Fig. 11 (Family: none)	1, 2, 7, 16, 19, 26 6, 19, 27-31
X	Microfilm of the specification and drawings annexed to the request of Japanese Utility Model Application No. 52419/1989 (Laid-open No. 142625/1990) (Usui Kokusai Sangyo Kaisha, Ltd.), 04 December, 1990 (04.12.90), Claims 1, 3; page 10, lines 7 to 15; Fig. 6 (Family: none)	1, 2, 7, 8, 17-19, 26 28, 29
Y	EP 1153649 A1 (NGK INSULATORS, LTD.), 14 November, 2001 (14.11.01), Par. No. [0014] & JP 2001-314762 A Par. No. [0014] & US 2001/56034 A1	6
Y	EP 1138892 A2 (NGK INSULATORS, LTD.), 04 October, 2001 (04.10.01), Par. Nos. [0052] to [0054]; Fig. 8 & JP 2001-280124 A Par. Nos. [0043], [0044]; Fig. 8 & US 2001/36427 A1	24, 25
Y	JP 9-173866 A (Nippon Soken, Inc.), 08 July, 1997 (08.07.97), Claims 1, 3 (Family: none)	27
Y	EP 661098 A2 (NGK INSULATORS, LTD.), 05 July, 1995 (05.07.95), Claims 14, 17, 18, 30; Figs. 8 to 10 & JP 7-232084 A Claims 14, 17, 18, 30; Figs. 8 to 10 & US 5538697 A	28, 29
Y	EP 976679 A1 (MATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.), 02 February, 2000 (02.02.00), Par. No. [0080]; Fig. 4 & JP 2000-44204 A Par. No. [0030]; Fig. 4	30
Y	JP 11-211371 A (Nippon Furnace Kogyo Kaisha, Ltd.), 06 August, 1999 (06.08.99), Par. No. [0029]; Figs. 3, 4 (Family: none)	31